

CLAIMS

1. A honeycomb structural body comprising one or plural pillar-shaped porous ceramic members in which many through-holes are arranged side by side in a longitudinal direction through partition walls and either one end portions of these through-holes are plugged, characterized in that the partition wall forming the structural body has a surface roughness of not less than 10 μm as a maximum roughness R_z defined in JIS B0601-2001 and an average pore size of 5-100 μm in a pore distribution measured by a mercury pressure method, and satisfies the following relationship:

$$A \geq 90 - B/20$$

when a ratio pores having a pore size of 0.9-1.1 times the average pore size to total pore volume is A (%) and a thickness of the partition wall is B (μm).

2. A honeycomb structural body comprising one or plural pillar-shaped porous ceramic members in which many through-holes are arranged side by side in a longitudinal direction through partition walls and either one end portions of these through-holes are plugged, characterized in that the partition wall forming the structural body has a surface roughness of not less than 10 μm as a maximum roughness R_z defined in JIS B0601-2001 and an average pore size of 5-100 μm in a pore distribution measured by a mercury pressure method, and satisfies the following relationship:

$$A \leq 100 - B/20$$

when a ratio pores having a pore size of 0.9-1.1 times the average pore size to total pore volume is A (%) and a thickness of the partition wall is B (μm).

3. A honeycomb structural body according to claim 1, wherein the partition wall forming the structural body has a surface roughness of not less than 10 μm as a maximum roughness R_z defined in JIS B0601-2001 and an average pore size of 5-100 μm in a pore distribution measured by a

mercury pressure method, and satisfies the following relationship:

$$A \leq 100 - B/20$$

when a ratio pores having a pore size of 0.9-1.1 times the average pore size to total pore volume is A (%) and a thickness of the partition wall is B (μm).

4. A honeycomb structural body according to any one of claims 1 to 3, wherein a maximum roughness R_z showing the surface roughness is not more than 100 μm .

5. A honeycomb structural body according to any one of claims 1 to 4, wherein the surface of the partition wall separating the through-hole is provided with a coating layer of a catalyst.

6. A honeycomb structural body according to any one of claims 1 to 5, wherein the porous ceramic members are bundled by interposing a sealing material layer between said members.

7. A honeycomb structural body according to any one of claims 1 to 6, wherein the porous ceramic member is made of a silicon carbide ceramic.

8. A honeycomb structural body according to any one of claims 1 to 7, wherein said body is used as a filter for an exhaust gas purification apparatus in a vehicle.